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EXAMINER

MCNELIS, KATHLEEN A

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,432

Applicant(s)

YAMAKI ET AL.

Examiner

Kathleen A. McNelis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20 March 2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claims Status

Claims 1-19 remain for examination wherein claims 1, 10, 11, 14 and 15 are amended and claims 16-19 are new.

Acknowledgement of RCE

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.115, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/20/2006 has been entered.

Status of Previous Rejections

The previous rejection of:

Claims 10-11 and 15 under 35 U.S.C. 112 are withdrawn in view of applicants' arguments and amendments to the claims.

Claims 1, 2, 6, 10-11 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) is maintained.

Claim 9 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Duckworth (August, 2002) is maintained.

Claims 3-5, and 7-8 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) and in further view of EP 0 818 547 A1 (EP '547) is maintained.

Claims 12-13 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) and in further view

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of the ASM Handbook, formerly 9th edition, Metals Handbook, Volume 15, Casting ("Metals Handbook") is maintained.

Claims 14-15 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) in further view of the ASM Handbook, formerly 9th edition, Metals Handbook, Volume 15, Casting ("Metals Handbook") and in further view of EP 0 818 547 A1 (EP '547) is maintained.

DETAILED ACTION

Claim Objections

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 18 depends from claim 17, which limits the temperature to below that which will melt those metals constituting the housing shell. Claim 18 adds the limitation of charging at a temperature in the range of 550 °C or higher, which will exceed and/or overlap with the melting ranges of the metals constituting the housing shell.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claim 1, examiner does not find support in the disclosure for the amended feature "preparing inflators to be thermally treated without destroying vehicles". Page 3 of the amended specification discloses that "inflators which have been removed from scrapped vehicles" are treated, but this does not preclude destroying the vehicle.

With respect to claim 18, examiner does not find support for a temperature range of 550 °C or higher. On page 8 of the amended specification, applicants state that it is preferable to set an upper limit to temperature to prevent the casings from melting, preferably the temperature should be set to 450 to 550 °C in the case of aluminum and 550 to 700 °C in the case of iron and stainless steel.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 6, 10-11, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276).

Claims 1, 2, 6, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. in view of Morey for the reasons set forth in the October 18, 2005 office action.

The minor amendments to claims 10 and 11 do not affect the scope.

With respect to the amended feature in claim 1: "preparing inflators to be thermally treated without destroying vehicles," Fukabori et al. teaches that previous conventional

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methods for recovering gas generators involved manually locating and recovering the generators from vehicles. The method taught by Fukabori et al. is an improvement over this method which saves time and labor by collecting the air bags from crushed vehicles (col. 1 lines 57-65). Even with this crushing step, Fukabori et al. discloses that manual separation is required when the crushed pieces are larger than the air bag apparatus (col. 3 lines 19-24) and that non-actuated gas generators are first charged into an actuating furnace prior to melting (col. 4 lines 7-21). These teachings suggest that the method disclosed by Fukabori et al. can be used for treating gas generators which have not been affected by vehicle crushing. It has been well established that the use of patents as references is not limited to what the patentees described as their own inventions and a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments (See M.P.E.P. 2123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use manual removal techniques as disclosed by Fukabori et al. to remove air bag inflators to be thermally treated without destroying vehicles.

Further, Fukabori et al. disclose examples (col. 5 line 51 – col. 7 line 2) of recovering metals from gas generators wherein gas generators are the starting material (i.e. not vehicles), which suggests that the vehicle crushing step is not necessary for the subsequent treatment of the gas generators. Additionally, Fukabori et al. discloses that non-actuated gas generators are first charged into an actuating furnace prior to melting (col. 4 lines 7-21) which suggests a method for treating gas generators which have not been affected by vehicle crushing. Therefore it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to use the process disclosed by Fukabori et al. for treatment of gas generators from other sources than destroyed vehicles.

With respect to new claim 16, Morey discloses that the wire is chopped or cut to length as described in the October 18, 2005 office action.

With respect to new claim 17, Fukabori et al. discloses classifying gas generators according to housings made of aluminum or stainless steel (col. 3 lines 35-53), which is the same as grouping the inflators according to metals constituting said housing shells. Fukabori et al. discloses that non-actuated gas generators are first charged into an actuating furnace prior to melting wherein they are heated to between 150 and 450 °C to ignite and completely burn the gas generating agent (col. 4 lines 7-21).

Fukabori et al. is silent with regard to the wire harness, and therefore does not teach cutting and removing said wiring harness.

Morey (U.S. Pat No. 4,362,279) discloses a method for recovering and recycling metal and plastic from insulated wire. Wire is chopped or cut to length prior to separation from the insulation (col. 2 lines 18-34). Morey teaches that there is an economic benefit to recover both metals and plastic from wire (col. 2, lines 18-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the wiring harness from the gas generating agent of Fukabori et al. and process the wiring harness according to the method of Morey, to benefit from the economic value of the recovered metal and plastic as taught by Morey.

With respect to claim 18, Fukabori et al. discloses that non-actuated gas generators are first charged into an actuating furnace prior to melting wherein they are

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heated to between 150 and 450 °C to ignite and completely burn the gas generating agent as discussed above regarding claim 17. The temperature range is lower than that of the claimed 550 °C or higher, however the process is the same or substantially similar and the purpose of heating in both cases is to completely burn the gases. It is well settled that where the principal difference between a claimed process and that taught by reference is a temperature difference, it is incumbent upon applicants to establish the criticality of that difference (Ex parte Khusid, et al., 174 USPQ 59).

With respect to claim 19, Fukabori et al. teaches that the actuating furnace can be batch or continuous (col. 4 lines 7-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to cool the interior of the thermal treating tower after treating inflator batches and then remove inflators from the furnace. Further, Fukabori et al. teaches that the actuators are then melted (col. 4 lines 7-8).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) as applied to claim 1 and in further view of Duckworth (August 2002).

Fukabori et al. in view of Morey discloses a high temperature treating method for air-bag inflators as described above.

Fukabori et al. in view of Morey is silent with respect to physical facilities and therefore does not disclose that the operation prior to thermal treatment is conducted in a lightning protected environment as in instant claim 9.

Duckworth teaches that methods for protection of personnel and equipment are reliable and inexpensive compared to the cost of equipment repair, and that nearly all lightning damage to equipment can be avoided (p. 124). It would have been obvious to

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one of ordinary skill in the art at the time the invention was made to install lightening protection as taught by Duckworth in the process of Fukabori et al. in view of Morey to prevent costly damage to equipment as taught by Duckworth.

Claims 3-5, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) as applied to claim 1 and in further view of EP 0 818 547 A1 (EP '547).

Claims 3-5, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. in view of Morey as applied to claim 1 and in further view EP '547 for the reasons set forth in the October 18, 2005 office action.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) and in further view of the ASM Handbook, formerly 9th edition, Metals Handbook, Volume 15, Casting ("Metals Handbook").

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. in view of Morey and in further view of the ASM Metals Handbook for the reasons set forth in the October 18, 2005 office action.

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) in further view of the ASM Handbook, formerly 9th edition, Metals Handbook, Volume 15, Casting ("Metals Handbook") as applied to claim 13 and in further view of EP 0 818 547 A1 (EP '547).

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. in view of Morey and the ASM Metals Handbook as applied to claim 13

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and in further view of EP '547 for the reasons set forth in the October 18, 2005 office action.

The minor amendment to claim 14 does not affect the scope.

With respect to claim 15, while Fukabori et al. in view of Morey, the ASM Metals Handbook and EP '547 do not teach that the purpose of cutting the inflators is to prevent water from exploding during the melting step, examiner contends that the shearing or shredding operations disclosed by EP '547 and discussed in the October 18, 2005 office action would have this result.

Response to Arguments

Applicant's arguments filed 3/20/2006 have been fully considered but they are not persuasive.

Applicants' arguments regarding the 103(a) rejections of claim 1-19 are summarized as follows:

1. Regarding claims 1-15, applicants' have amended claim 1 to include the limitation "inflators to be thermally treated without destroying vehicles" which applicants assert will overcome the prior art rejections based on Fukabori.
2. New claim 17 is allowable because Fukabori does not disclose or suggest the step of cutting or removing the wiring harnesses from the inflators.
3. New claim 18 is allowable because the temperature range of 550 °C or higher is patentable over the range of between 150 to 450 °C in Fukabori, and further this temperature range is required to completely burn the gas and prevent explosion.

Examiner's responses to applicants' arguments are as follows:

1. Regarding claims 1-15, examiner cannot find support for the amendment in the specification as discussed above in the 35 USC 112 1st paragraph rejection of claim 1. Further, examiner asserts that Fukabori et al. discloses manual removal of actuators from vehicles which have not been destroyed and while this is not a preferred embodiment, it may be relied upon as a prior art teaching as discussed above regarding claim 1. In addition, Fukabori et al. discloses an additional treatment step for air bag inflators which have not been actuated which examiner asserts is a disclosure in Fukabori et al. of a method to treat air bag inflators which have not been affected by vehicle crushing as discussed above regarding claim 1.
2. See above rejection of claim 17.

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3. See above rejection of claim 18. In addition, Fukabori et al. teaches that heating the non-actuated gas generators to between 150 and 450 °C **does** ignite and completely burn the gas generating agent (col. 4 lines 7-19). Examiner has noted the argument that this temperature is not sufficient, however the arguments of counsel cannot take the place of objective evidence to establish unexpected results (See M.P.E.P. 716.01(c) (II)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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